

c. providing an initial surface profile model in terms of the at least one input variable and at least one unknown coefficient;

d. generating an approximate profile prediction from the initial surface profile model and the respective test value of the at least one input variable;

e. generating an indicator of difference between the test surface profile and the approximate profile prediction;

f. generating a respective optimum value of the at least one unknown coefficient that minimizes the indicator of difference;

g. modifying the initial surface profile model to include the at least one optimum value, thereby providing a final model in terms of the at least one input variable; and

h. generating the respective process value of the at least one input variable from the final model and the desired surface profile.

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6. (amended) The method of claim [35] 5 wherein generating a respective optimum value of the at least one unknown coefficient includes changing at least one of said at least one respective rough preliminary value of the at least one unknown coefficient and comparing the test surface profile and the approximate profile prediction incorporating the at least one changed value.

10. (amended) A method of predictively calculating a process surface profile to be created on a process substrate by a plasma process sequence defined by a respective process value of at least one input variable, the method comprising the steps of:

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a. selecting a respective test value of the at least one input variable, at least one of said at least one respective test value being unequal to at least one of said at least one respective process value;

b. [subjecting] performing, on a test substrate [to], a test process defined by the respective test value, thereby creating a test surface profile;

c. providing an initial surface profile model in terms of the at least one input variable and at least one unknown coefficient;

d. generating an approximate profile prediction from the initial surface profile model and the respective test value of the at least one input variable;

e. generating an indicator of difference between the test surface profile and the approximate profile prediction;

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f. generating a respective optimum value of the at least one unknown coefficient that minimizes the indicator of difference;

g. modifying the initial surface profile model to include the at least one optimum value, thereby providing a final model in terms of the at least one input variable; and

h. introducing the respective process value of the at least one input variable into the final model, thereby forming a description of the process surface profile.

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18. (amended) A method of configuring an apparatus for processing a process substrate according to a plasma process sequence defined by a respective process value of at least one input variable, the apparatus including a plasma reactor, the at least one input variable including at least one reaction variable, the method comprising the steps of:

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a. selecting a respective test value of the at least one input variable;

b. [subjecting] performing, on a test substrate [to], a test process defined by the respective test value, thereby creating a test surface profile;

c. providing an initial surface profile model in terms of the at least one input variable and at least one unknown coefficient;

d. generating an approximate profile prediction from the initial surface profile model and the respective test value of the at least one input variable;

e. generating an indicator of difference between the test surface profile and the approximate profile prediction;

f. generating a respective optimum value of the at least one unknown coefficient that minimizes the indicator of difference;

g. modifying the initial surface profile model to include the at least one optimum value, thereby providing a final model in terms of the at least one input variable;

- h. generating the respective process value of the at least one input variable from the final model and the desired surface profile; and
- i. configuring the reactor to process the process substrate according to the derived respective process value of the at least one reaction variable.

*(Amended)*

19. An apparatus for determining a respective process value of at least one input variable governing a plasma process sequence for creating a desired surface profile on a process substrate, the apparatus comprising:

- a. a computer memory for storing the desired surface profile;
- b. a computer memory for storing a test surface profile, created by [subjecting a test substrate to] performing a test process defined by a respective test value of the at least one input variable on a test substrate;
- c. means for generating an initial surface profile model in terms of the at least one input variable and at least one unknown coefficient;
- d. means for generating an approximate profile description from the initial surface profile model and the respective test value of the at least one input variable;
- e. means for generating an indicator of difference between the test surface profile and the approximate profile prediction;
- f. means for generating a respective optimum value of the at least one unknown coefficient that minimizes the indicator of difference;
- g. means for modifying the initial surface profile model to include the at least one optimum value, thereby providing a final model in terms of the at least one input variable; and
- h. means for generating the respective process value of the at least one input variable from the final model and the desired surface profile.

24. (amended) An apparatus for predictively calculating a process surface profile to be created on a process substrate by a plasma process sequence defined by a respective

process value of at least one input variable, the [method] apparatus comprising [the steps of]:

- a. a computer memory for storing the respective process value;
- b. a computer memory for storing a test surface profile, the computer memory being created by [subjecting a test substrate to] performing a test process defined by a respective test value of the at least one input variable on a test substrate;
- c. means for generating an initial surface profile model in terms of the at least one input variable and at least one unknown coefficient;
- d. means for generating an approximate profile prediction from the initial model and the respective test value of the at least one input variable;
- e. means for generating an indicator of difference between the test surface profile and the approximate profile prediction;
- f. means for generating a respective optimum value of the at least one unknown coefficient that minimizes the indicator of difference;
- g. means for modifying the initial surface profile model to include the at least one optimum value, thereby providing a final model in terms of the at least one input variable; and
- h. means for introducing the respective process value of the at least one input variable into the final model, thereby forming a description of the process surface profile.

REMARKS

This Amendment is responsive to the Office Action dated February 22, 2000 in connection with the above-identified patent application. This Amendment addresses each of the rejections and objections posed by the examiner. Accordingly, reconsideration is respectfully requested.

The examiner has rejected the claims, specifically claims 1, 10, 18, 19 and 24 under 35 U.S.C. § 112, second paragraph as being unclear in view of the term "subjecting." Accordingly, applicant has now substituted therefor the more-accepted word -- performing-- along with appropriate, self-explanatory changes to each claim to make the